RUCKUS R670

Indoor Wi-Fi 7 (802.11be) Access Point with 9.34 Gbps Data Rate

BENEFITS

Connect more devices simultaneously
Improve device performance, by enabling more simultaneous device connections with built-in 6 spatial streams (2x2:2 in 2.4GHz, 2x2:2 in 5GHz, 2x2:2 in 6GHz) technology. 9.34 Gbps Combined data rate.

Wi-Fi 7 for mainstream deployment
Provides exceptional end-user experience expanding the range of use cases for Wi-Fi 7 including guest rooms, classrooms, meeting rooms.

BeamFlex+ Adaptive Antenna Technology
For greater speed, fewer errors, and instant bandwidth delivery, RUCKUS BeamFlex+ patented technology offers first-of-its-kind smart antenna technology that maximizes signal coverage, throughput, and network capacity and work with any client. It further increases MIMO diversity gain and maximizes spatial multiplexing potential.

Converged Access Point
Allows customers to eliminate siloed networks and unify Wi-Fi and non Wi-Fi wireless technologies into one single network by using built-in BLE or Zigbee with support for Matter and Thread*. Expandable to future wireless technologies through USB port.

5 GbE eliminates bottleneck
Optimized multi-gigabit Wi-Fi performance delivered using the built-in 1/2.5/5GbE port to connect to multi-gigabit switches.

Multiple management options
Manage the R670 with on premise physical/ virtual appliances and control auto-provisioning for faster deployment and seamless firmware upgrades.

Enhanced Security
The latest Wi-Fi security standard with WPA3 and receive enhanced protection from man-in-the-middle attacks. Adds the power of RUCKUS DPSK3 to WPA3/SAE combining enhanced security with the flexibility and ease of use of dynamic passphrase to secure network access.

More Than Wi-Fi
Support solutions beyond Wi-Fi with RUCKUS IoT Suite, RUCKUS AI, RUCKUS One, RUCKUS Cloudpath Enrollment System and onboarding software.

Bandwidth-hungry ultra-high definition video, virtual reality, Internet of Things (IoT), an explosion of new devices and content! With these kinds of demands, organizations in every industry need more from their Wi-Fi, but with hundreds of devices and nonstop wireless noise and interference, busy indoor spaces can make challenging wireless environments.

The dawn of the Wi-Fi 7 era ushers in a new wave of possibilities. With its groundbreaking advancements in speed, capacity, latency, and reliability, Wi-Fi 7 will transform the way we connect and interact with the digital world.

From seamless streaming of ultra-high-definition content to immersive virtual and augmented reality experiences, Wi-Fi 7 enables applications that were previously unimaginable. Real-time social gaming can reach new heights, allowing for lag-free, competitive multiplayer experiences with unparalleled responsiveness.

The Internet of Things (IoT) also receive a significant boost, as Wi-Fi 7 supports a massive number of connected devices simultaneously, facilitating smart homes, smart cities, and intelligent automation on a grand scale.

Moreover, industries such as hospitality and education can benefit immensely from Wi-Fi 7 low latency and high reliability. Other verticals like, MDUs, large public venues and service providers gain greatly from Wi-Fi 7 unprecedented advancements in speed and capacity.

The RUCKUS R670 is a mid-range Wi-Fi 7, tri-band concurrent indoor AP that delivers 6 spatial streams (2x2:2 in 2.4GHz, 5GHz and 6GHz or 2x2:2 in 2.4GHz and 4x4:4 in 5GHz in dual band mode) With Multi-Link-Operation (MLO), Preamble Puncturing, 4K QAM Modulation and 320MHz channels. It delivers industry-leading performance environments with a combined data rate of 9.34 Gbps. Furthermore, a 5 Gbps Ethernet port eliminates wired backhaul bottleneck for full use of available Wi-Fi capacity.

Wireless requirements within enterprises are expanding beyond Wi-Fi. The R670 has one built-in IoT radio offering onboard BLE or Zigbee capabilities. The R670 is a converged access point that allows customers to seamlessly integrate any new wireless technologies with the USB port.

The R670 expands the reach of Wi-Fi 7 and addresses the needs of every day deployments, in guest rooms, classrooms, hotel rooms and lobby. It supports data intensive streaming applications like 4K/8K video transmissions, while supporting latency sensitive voice and data applications with stringent quality-of-service requirements.

The R670, with built-in RUCKUS exclusive technology, dramatically improves network performance through a combination of patented wireless innovations and learning algorithms that includes:

- **Airtime Decongestion:** Increases average network throughput in heavily congested environments
- **Transient Client management:** Reduces interference traffic from unconnected Wi-Fi devices
- **BeamFlex®+ Adaptive Antennas:** Extended coverage range and optimized throughput with patented dynamic multi-directional antennas and radio patterns and work with any client.

Whether you are deploying ten or ten thousand APs, the R670 is also easy to manage through RUCKUS multiple management options including cloud based and on premises controllers.

RUCKUS BeamFlex®+ Smart Adaptive Antennas

Access Point BeamFlex Antenna Pattern

RUCKUS' BeamFlex+ adaptive antennas allow the R670 AP to dynamically choose among a host of antenna patterns (over 4,000 possible combinations) in real-time to establish the best possible connection with every device. This leads to:

- Better Wi-Fi coverage
- Reduced RF interference

Traditional omni-directional antennas, found in generic access points, oversaturate the environment by needlessly radiating RF signals in all directions. In contrast, the RUCKUS BeamFlex+ adaptive antenna directs the radio signals per-device on a packet by-packet basis to optimize Wi-Fi coverage and capacity in real-time to support high device density environments. BeamFlex+ operates without the need for device feedback and hence can benefit even devices using legacy standards.

Figure 1. Example of BeamFlex+ pattern

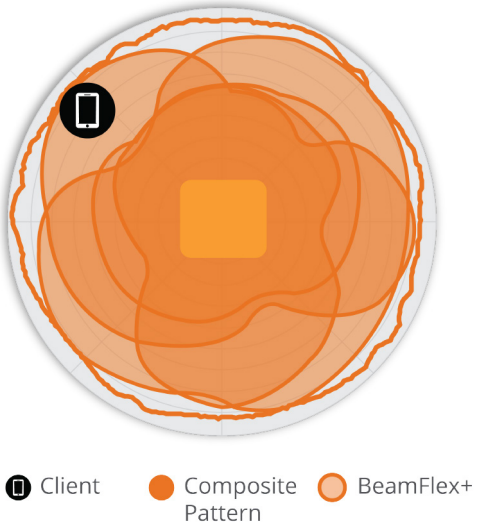


Figure 2. R670 2.4GHz Azimuth Antenna Patterns

Figure 3. R670 5GHz Azimuth Antenna Patterns

Figure 4. R670 6GHz Azimuth Antenna Patterns

Figure 5. R670 2.4GHz Elevation Antenna Patterns

Figure 6. R670 5GHz Elevation Antenna Patterns

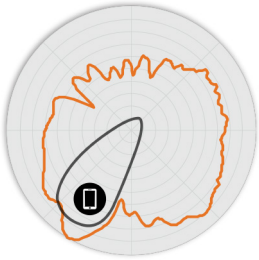
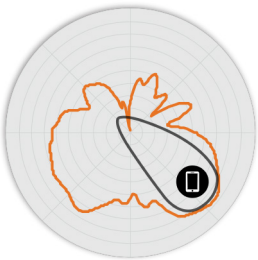


Figure 7. R670 6GHz Elevation Antenna Patterns



Note: The outer trace represents the composite RF footprint of all possible BeamFlex+ antenna patterns, while the inner trace represents one BeamFlex+ antenna pattern within the composite outer trace.

WI-FI	
Wi-Fi Standards	• IEEE 802/11a/b/g/n/ac/ax/be, Wi-Fi 7†
Supported Rates	• 802.11be: 4 to 5765 Mbps • 802.11ax: 4 to 4804 Mbps • 802.11ac: 6.5 to 866 Mbps • 802.11n: 6.5 to 300 Mbps • 802.11a/g: 6 to 54 Mbps • 802.11b: 1 to 11 Mbps
Supported Channels	• 2.4GHz: 1-13 • 5GHz: 36-64, 100-144, 149-165 • 6GHz: 1-233
MIMO	• 2x2 SU-MIMO* in tri-band mode. 4x4(5GHz) in dual-band • 2x2 MU-MIMO* in tri-band mode. 4x4(5GHz) in dual-band
Spatial Streams	• 2 in tri-band mode or 4 in dual-band mode at 5GHz
Radio Chains and Streams	• 2x2:2 in all 3 bands. 4x4:4(5GHz) in dual-band mode
Channelization	• 20, 40, 80, 160, 320 MHz
Security	• WEP, WPA, WPA-PSK, WPA2, WPA2-PSK, WPA3, WPA3-SAE, OWE, PMF (802.11w), Dynamic PSK, DPSK3 • WIPS/WIDS. TPM 2.0, Secure Boot
Other Wi-Fi Features	• WMM, Power Save, Tx Beamforming, LDPC, STBC, 802.11r/k/v, MBO • MLO (Multi-link operation), Preamble Puncturing • Web Authentication and Guest Access • Hotspot, Hotspot 2.0 • Captive Portal • WISPr

RF	
Antenna Type	• BeamFlex+ adaptive antennas with polarization diversity • Adaptive antenna that provides 4,000+ unique antenna patterns per band
Antenna Gain (max)	• Up to 4dBi
Peak Transmit Power (Tx port/ chain + Combining gain)	• 2.4GHz: 25dBm (2x2) • 5GHz: 25dBm(2x2). 28dBm(4x4) • 6GHz: 25dBm (2x2)
Frequency Bands	• ISM (2.4-2.484GHz) • U-NII-1 (5.15-5.25GHz) • U-NII-2A (5.25-5.35GHz) • U-NII-2C (5.47-5.725GHz) • U-NII-3 (5.725-5.85GHz) • U-NII-5 (5.925–6.425GHz) • U-NII-6 (6.425–6.525GHz) • U-NII-7 (6.525–6.875GHz) • U-NII-8 (6.875–7.125GHz)

2.4GHZ RECEIVE SENSITIVITY (dBm)

HT20		HT40		VHT20		VHT40	
MCS0	MCS7	MCS0	MCS7	MCS0	MCS7	MCS0	MCS7
-97	-79	-94	-76	-97	-79	-94	-76
HE20/EHT20				**HE40/EHT40**			
MCS0	MCS7	MCS9	MCS11	MCS0	MCS7	MCS9	MCS11
-97	-79	-74	-68	-94	-76	-71	-65

5GHZ RECEIVE SENSITIVITY (dBm) in 2x2 tri-band mode

HT20/VHT20				HT40/VHT40				VHT80			
MCS0	MCS7	MCS8	MCS9	MCS0	MCS7	MCS8	MCS9	MCS0	MCS7	MCS8	MCS9
-96	-79	-76	-73	-93	-75	-73	-70	-90	-72	-70	-67
HE20/EHT20				**HE40/EHT40**				**HE80/EHT80**			**HE160/EHT160**
MCS0	MCS9	MCS13		MCS0	MCS9	MCS13		MCS0	MCS9	MCS13	MCS0	MCS9	MCS13
-96	-73	-61		-93	-70	-58		-90	-67	-55	-87	-64	-52

5GHZ RECEIVE SENSITIVITY (dBm) in 4x4 dual-band mode

HT20/VHT20				HT40/VHT40				VHT80			
MCS0	MCS7	MCS8	MCS9	MCS0	MCS7	MCS8	MCS9	MCS0	MCS7	MCS8	MCS9
-100	-82	-79	-76	-97	-79	-76	-73	-94	-76	-73	-70
HE20/EHT20				**HE40/EHT40**				**HE80/EHT80**			**HE160/EHT160**
MCS0	MCS9	MCS13		MCS0	MCS9	MCS13		MCS0	MCS9	MCS13	MCS0	MCS9	MCS13
-100	-76	-64		-97	-73	-61		-94	-70	-58	-91	-67	-55

6GHZ RECEIVE SENSITIVITY (dBm)

HE20/EHT20			HE40/EHT40			HE80/EHT80		
MCS0	MCS9	MCS13	MCS0	MCS9	MCS13	MCS0	MCS9	MCS13
-96	-73	-61	-93	-70	-58	-90	-67	-55

HE160/EHT160				EHT320			
MCS0	MCS9	MCS11	MCS13	MCS0	MCS9	MCS11	MCS13
-87	-64	-58	-52	-84	-61	-55	-49

2.4GHZ TX POWER TARGET (PER CHAIN)

Rate	Pout (dBm)
MCS0, HT20	22
MCS7, HT20	19
MCS9, VHT20	18
MCS11, HE40	16
MCS13, EHT40	12

5GHZ TX POWER TARGET (PER CHAIN)

Rate	Pout (dBm)
MCS0, HT40	22
MCS7, HT40	19
MCS9, VHT80	17.5
MCS11, HE160	16
MCS13, EHT160	14

6GHZ TX POWER TARGET (PER CHAIN)

Rate	Pout (dBm)
MCS0, HT40	22
MCS7, HT40	17.5
MCS9, VHT80	16.5
MCS11, HE160	15
MCS13, EHT320	13

† Pending certification

* MIMO disabled by default for 2x2 radios†.

POWER CONSUMPTION			
Mode	**Power Consumption**	**System Configuration**	**Wi-Fi Radios**
DC Power	35W	• 5Gbps Ethernet Enabled • 1Gbps Ethernet Enabled • USB Enabled (3W) • IoT Enabled (selectable)	2.4GHz (2x2) Tx 22dBm 5GHz (2x2) Tx 22dBm 6GHz (2x2) Tx 22dBm
802.3bt5 PoH, uPoE	35W	• 5Gbps Ethernet Enabled • 1Gbps Ethernet Enabled • USB Enabled (3W) • IoT Enabled (selectable)	2.4GHz (2x2) Tx 22dBm 5GHz (2x2) Tx 22dBm 6Ghz (2x2) Tx 22dBm
802.3at	25.5W	• 5Gbps Ethernet Enabled • 1Gbps Ethernet Enabled • USB Disabled (0W) • IoT Enabled (selectable)	2.4GHz (2x2) Tx 20dBm 5GHz (2x2) Tx 20dBm 6Ghz (2x2) Tx 21dBm

PERFORMANCE AND CAPACITY	
Peak PHY Rates	• 2.4GHz: 689 Mbps • 5GHz: 5765 Mbps (4x4:4) or 2882 Mbps (2x2:2) • 6GHz: 5765 Mbps
Client Capacity	• Up to 768 clients per AP
SSID	• Up to 36 per AP

RUCKUS RADIO MANAGEMENT	
Antenna Optimization	• BeamFlex+ • Polarization Diversity with Maximal Ratio Combining (PD- MRC)
Wi-Fi Channel Management	• ChannelFly • Background Scan Based
Client Density Management	• Adaptive Band Balancing • Client Load Balancing • Airtime Fairness • Airtime-based WLAN Prioritization
SmartCast Quality of Service	• QoS-based scheduling, QoS Mirroring • Directed Multicast • L2/L3/L4 ACLs
Mobility	• SmartRoam
Diagnostic Tools	• Spectrum Analysis • SpeedFlex

NETWORKING	
Controller Platform Support	• SmartZone • RUCKUS Unleashed • RUCKUS One
Mesh	• SmartMesh™ wireless meshing technology. Self-healing Mesh in 2.4 GHz, 5GHz, and 6GHz
IP	• IPv4, IPv6, dual-stack
VLAN	• 802.1Q (1 per BSSID or dynamic per user based on RADIUS) • VLAN Pooling • Port-based
802.1x	• Authenticator & Supplicant
Tunnel	• GRE, Soft-GRE
Policy Management Tools	• Application Recognition and Control • Access Control Lists • Device Fingerprinting • Rate Limiting • URL Filtering
IoT Onboard	• Integrated BLE or Zigbee (one IoT radio) • Matter & Thread capable

PHYSICAL INTERFACES	
Ethernet	• One 100M/1/2.5/5GbE (PoE) port and one 10M/ 100M/1GbE port • Power over Ethernet (802.3af/at/bt) with Category 5e (or better) cable • LLDP support
USB	• 1 USB 2.0 port, Type A
DC Power	• 48V DC Power Jack

PHYSICAL CHARACTERISTICS	
Physical Size	• 22cm (L), 22cm (W), 4.9cm (H) • 8.66in (L) x 8.66in (W) x 1.93in (H)
Weight	• 1.02kg • 2.25lbs
Mounting	• Wall, acoustic ceiling, desk • Bracket (902-0120-0000)
Physical Security	• Secure bracket (sold separately) (902-0120-0000)
Operating Temperature	• 0ºC (32ºF) to 50ºC (122ºF)
Operating Humidity	• Up to 95%, non-condensing

Product owner is responsible to abide by the country of deployment spectrum regulations when configuring and deploying this product/device.

The 6GHz band is enabled in countries where it is authorized by the local regulations. AP operates as per local regulations via country regulatory domain, otherwise 6GHz radio is disabled. Once this product is certified to operate in a particular country the 6GHz band may be enabled with a future software release.

* *Expected in a future software release.*

CERTIFICATIONS AND COMPLIANCE	
Wi-Fi Alliance[1]	• Wi-Fi CERTIFIED™ a, b, g, n, ac, ax, be (Wi-Fi 6, Wi-Fi 7[3]) • Passpoint®, Vantage
Standards Compliance[2]	• IEC/EN/UL 60950-1 Safety • IEC/EN/UL 62368-1 Safety • EN 60601-1-2 Medical • EN 61000-4-2/3/5 Immunity • EN 50121-1 Railway EMC • EN 50121-4 Railway Immunity • IEC 61373 Railway Shock & Vibration • UL 2043 Plenum • EN 62311 Human Safety/RF Exposure • WEEE & RoHS • ISTA 2A Transportation

SOFTWARE AND SERVICES	
Cloud Based Services	• RUCKUS One
Network Analytics	• RUCKUS AI (Formerly known as RUCKUS Analytics)
Security and Policy	• Cloudpath

ORDERING INFORMATION	
901-R670-XX00	RUCKUS R670 Wi-Fi 7 tri-band concurrent wireless Access Point with 2x2:2 (2.4GHz) + 2x2:2 (5GHz) + 2x2:2 (6GHz). Wi-Fi 7 in all three bands. 6GHz LPI mode and SP mode support with AFC. Software configurable to 2x2 (2.4GHz) + 4x4 (5GHz) dual-band mode. BeamFlex+, one 5/2.5/1-Gigabit Ethernet backhaul, one 1-Gigabit port, PoH/uPoE/802.3bt PoE support, onboard BLE and Zigbee selectable IoT radio, USB 2.0, TPM 2.0, and Secure Boot. Adjustable acoustic drop ceiling bracket included. Power adapter not included. Includes Limited Lifetime Warranty.

See RUCKUS price list for country-specific ordering information.
Warranty: Sold with a limited lifetime warranty.
For details see: **http://support.ruckuswireless.com/warranty**.

OPTIONAL ACCESSORIES	
902-1180-XX00	• Multigigabit PoE injector (2.5/5/10)-BaseT PoE port, 60W
902-0120-0000	• Spare, Accessory Mounting Bracket
902-1170-XX00	• Power Supply (48V, 0.75A, 36W)
902-0196-0000	• T-bar Bracket

PLEASE NOTE: When ordering Indoor APs, you must specify the destination region by indicating -US, -WW, or -Z2 instead of XX. When ordering PoE injectors or power supplies, you must specify the destination region by indicating -US, -EU, -AU, -BR, -CN, -IN, -JP, -KR, -SA, -UK, or -UN instead of -XX. For access points, -Z2 applies to the following countries: Algeria, Egypt, Israel, Morocco, Tunisia, and Vietnam.

[1] For complete list of WFA certifications, please see Wi-Fi Alliance website.

[2] For current certification status, please see price list.

[3] Pending certification

About RUCKUS Networks

RUCKUS Networks builds and delivers purpose-driven networks that perform in the demanding environments of the industries we serve. Together with our network of trusted go-to-market partners, we empower our customers to deliver exceptional experiences to the guests, students, residents, citizens and employees who count on them.

www.ruckusnetworks.com

Visit our website or contact your local RUCKUS representative for more information.

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